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REMARKS

This communication is in response to the Office Action mailed April 1, 2005. The Office Action first reports that the title of the invention is not descriptive. Applicant has changed the title that suggested, i.e., "GEOMETRY-DRIVEN FEATURE POINT-BASED IMAGE SYNTHESIS."

The Office Action next reports that claim 30 was objected to because it is improperly dependent upon claim 24. Applicants have corrected this inadvertent error by amending claim 30 to depend from claim 25.

Claims 25-34 were objected to because they utilize the term "expression" where it is reported that the term does not have clear meaning associated with it. Applicants respectfully disagree. At page 17, lines 6-27, applicants provide a clear definition for "expression" that being synthesized images having feature points. Nevertheless, applicants have amended claims 25, 27, 30, 35, 37 and 40 and 34 to replace "expression" with "image", while also clarifying that the image is based on feature points.

In view of the foregoing, applicants respectfully request withdrawal of the objections to the title and claims.

The Office Action reports that claims 1-43 have been rejected. Claims 1-14 and 24 are rejected as being unpatentable over Cosatto et al. (E. Cosatto and H. Graf, "Photorealistic Talking-Heads from Image Samples). From the Abstract, it appears that Cosatto et al. describe a method for rendering a talking head by blending bitmaps of facial parts, where a database stores many different bitmaps of the facial parts.

However, Cosatto et al. do not teach or suggest the method recited in claim 1. Applicants have first amended claim 1 to clarify that a single frame having a selected image is

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generated. Claim 1 recites that a geometric component is generated "corresponding to a selected image for the frame based on identified feature points from a set of representative images, where each image of the set has the identified feature points, and wherein the geometric component is a dimensional vector of feature point positions". This aspect is simply not taught by Cosatto et al. because Cosatto et al. merely blends different parts of the face together to form a face. Cosatto et al. do not generate anything equivalent to the geometric component as recited by claim 1, and certainly do not generate the geometric component from a set of representative images, where each image of the set has the identified feature points. In other words the set of images is not different parts of the face as used in Cosatto et al., rather it is variations of images having the same feature points. This characteristic may be even more significant when the next step of claim 1 is considered.

Specifically, claim 1 further recites "generating the selected image for the frame from a composite of the set of representative images based on the geometric component." First, as stated above, Cosatto et al. do not generate the geometric component so this element is also clearly not taught or suggested by Cosatto et al. However, it is also clear from this portion of claim 1 that the selected image for a single frame is also generated from the composite of the set of representative images, i.e. image variations of the set (again where each variation has the same feature points) are combined. Cosatto et al. simply do not teach or suggest using the set of images in this manner.

For the foregoing reasons at least, the rejection of claim 1 should be withdrawn. Accordingly, claim 1 should be allowed. Dependent claims 2-14 are believed separately patentable. Cosatto et al. do not teach, suggest or use a geometric component in a manner recited by claim 1, thus any further features recited by these claims pertaining to the

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geometric component directly or indirectly are also not taught or suggested, and thereby in combination are separately patentable. Claims 15-23 were rejected as being unpatentable over Cosaato et al. and Chai et al. ("Vision-Based Control of 3D Animation"). However, again in view that Cosatto et al. do not teach, suggest or use a geometric component in a manner recited by claim 1, any further features recited by these claims pertaining to the geometric component directly or indirectly are also not taught or suggested, and thereby, in combination are separately patentable.

Claims 25-45 were rejected as being unpatentable over Cosaato et al. and Chai et al. Independent claims 25 and 35 are similar in that both pertain to rendering a single frame of a synthesized image (a facial image in claim 35) by:

- rendering an image with identified feature points;
- receiving information pertaining to moving a selected feature point;
- accessing a set of stored representatives of various images, wherein each image of the set of stored representative images has the same corresponding feature points associated therewith;
- ascertaining a position of at least one feature point from a change in position of another feature point based on a change in movement of the selected feature point and based on the set of stored representatives of images; and
- rendering a new image for the frame with two or more feature points having changed position.

The foregoing text in underlining emphasizes features not taught or suggested by the cited combination. As stated above, Cossato et al. (which was cited for teaching the set of representative images) do not teach or suggest a set of images having the same feature points. Lacking such a set of images, Cossato et al. certainly could not ascertain a position of a

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feature point based on the set of images as recited in claims 25 and 35. Chai et al. were not used for this feature, and the reference does not appear to teach or suggest it as well.

For at least these apparent reasons, reconsideration and allowance of claims 25 and 35 are respectfully requested. Claims 26-34 and 36-45 are believed separately patentable at least because each recite further features of the feature points which in combination with the unique set of images are not taught by Cossato et al or Chai et al.

An extension of time is hereby requested for responding to the Office Action. A charge authorization for the extension of time fee is included herewith.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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